

MR. FRENCH

# NASA News

National Aeronautics and  
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For Release

IMMEDIATE

## Press Kit

Project

Intelsat V-D

RELEASE NO: 82-30

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For Release

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(Phone: 202/755-8104)

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## INTELSAT SATELLITE SCHEDULED FOR LAUNCH

Intelsat V-D, the fourth of a new series of nine international telecommunications satellites owned and operated by the 105-nation International Telecommunications Satellite Organization (Intelsat), is scheduled to be launched by the NASA Kennedy Space Center on board an Atlas Centaur launch vehicle no earlier than March 4, 1982, from Cape Canaveral, Fla. The three Intelsat Vs were successfully launched by NASA in December 1980, May 1981 and December 1981.

Intelsat V-D weighs 1,928 kilograms (4,251 pounds) at launch and has almost double the communications capability of early satellites in the Intelsat series -- 12,000 voice circuits and two color television channels. It will be positioned in geosynchronous orbit over the Indian Ocean as the prime Intelsat satellite to provide communications services between Europe, the Middle East and the Far East.

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Intelsat V satellites are built by the Ford Aerospace and Communications Corp., Palo Alto, Calif., using system components developed by firms in the United Kingdom, France, the Federal Republic of Germany, Italy and Japan.

The International Telecommunications Satellite Organization is headquartered in Washington, D.C. NASA is reimbursed for all costs of the Atlas Centaur and launch services under the provisions of a launch services agreement signed in May last year.

The Atlas Centaur (AC-58) will place the Intelsat V-D into a highly elliptical transfer orbit ranging from 144.8 to 35,807 kilometers (90 to 22,254 miles) perigee to apogee. It is from this orbit at apogee that a solid propellant rocket motor attached to the satellite will be fired to circularize the orbit at geosynchronous altitude over the equator. At that altitude, because the speed of the satellite in orbit matches the rotational speed of the Earth, the satellite remains in position over one spot.

NASA's Lewis Research Center, Cleveland, Ohio, has management responsibility for Atlas Centaur development and operation. NASA's Kennedy Space Center, Fla., is assigned vehicle checkout and launch responsibility once the Atlas Centaur reaches Cape Canaveral.

Overall direction of the NASA expendable launch vehicle program is vested in the Office of Space Transportation Operations in Washington, D.C.

(END OF GENERAL RELEASE; BACKGROUND INFORMATION FOLLOWS.)

### ATLAS CENTAUR LAUNCH VEHICLE STATISTICS

Intelsat V-D will be launched by the Atlas Centaur, NASA's standard launch vehicle for intermediate weight payloads. The launch vehicle has the following general characteristics:

Height: 40.8 meters (134 feet) including nose fairing

Diameter: 3.05 m (10 ft.)

Total Liftoff Weight: 147,926 kg (326,120 lb.)  
including spacecraft

Liftoff Thrust: 1,917,088 newtons (431,000 lb.) sea level

#### Atlas Stage

The Atlas stage consists of the booster section (one-half stage) and the sustainer/vernier section (first stage). The Atlas is manufactured by General Dynamics/Convair, San Diego, Calif., using the MA-5 engine system supplied by Rocketdyne Division of Rockwell International, Canoga Park, Calif. The MA-5 system consists of two booster engines, one sustainer engine and two vernier engines. The Atlas stage has the following characteristics:

Height: 21.1 m (69.5 ft.)

Diameter: 3.05 m (10 ft.)

Propellants: RP-1 kerosene for fuel and liquid oxygen  
(LOX) as the oxidizer

Thrust: Total Booster: 1,645,750 N (370,000 lb.) sea level  
Sustainer: 266,880 N (60,000 lb.)  
Total Vernier: 4,448 N (1,000 lb.)

Total Liftoff Thrust: 1,917,088 N (431,000 lb.)

#### Centaur Stage

The Centaur (second stage) is manufactured by General Dynamics/Convair, using the RL-10 engines built by Pratt and Whitney Aircraft Group, West Palm Beach, Fla. This stage has the following characteristics:

Height: 9.1 m (30 ft.)

Diameter: 3.05 m (10 ft.)

Propellants: Liquid hydrogen for fuel and liquid oxygen  
for the oxidizer.

Thrust: 146,784 N (33,000 lb.) vacuum

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### LAUNCH OPERATIONS

Intelsat V is scheduled to be launched aboard Atlas-Centaur 58 from Pad A of NASA's Launch Complex 36, Cape Canaveral Air Force Station, Fla.

The Atlas and Centaur stages of the launch vehicle arrived at the Cape on Oct. 21, 1981. The Atlas stage was erected on the pad on Oct. 27, the interstage adapter on Oct. 28, and the Centaur stage was mated to the vehicle on Oct. 29. The flight events demonstration test, a comprehensive electrical test of the launch vehicle, was undertaken on Feb. 23.

Intelsat arrived at Hangar AO at the Cape on Jan. 18. The spacecraft's electrical systems were tested on Feb. 2, and the vehicle's three Earth sensors and two solar wings were installed on Feb. 9. The satellite was moved to Satellite Assembly and Encapsulation Building No. 2 in the KSC Industrial Area on Feb. 14. Intelsat underwent additional checkout in SAEF-2 and the apogee kick motor was installed on Feb. 16. The satellite was enclosed in its protective fairing on Feb. 23, and the spacecraft was mated with the launch vehicle on Feb. 24 at the pad.

# LAUNCH SEQUENCE FOR INTELSAT V-B

Flight Events	Time (seconds)	Velocity (km/hr)	Velocity mph)	Range (kilometers/miles)	Altitude (kilometers/miles)
Liftoff	.0	0	0	.0	.0
BECO	139.2	8,834	5,489	80.6	56.3
Booster Pack Jettison	142.3	8,927	5,547	87.6	59.3
Insulation Pack Jettison	164.3	9,478	5,889	139.3	79.3
Nose Fairing Jettison	208.9	10,988	6,827	259.0	113.6
SECO	254.2	13,187	8,194	404.8	141.8
Atlas/Centaur Separation	256.2	13,193	8,198	411.9	142.9
MES-1	262.7	13,161	8,178	435.0	146.4
MECO-1	573.9	26,786	16,645	2,015.2	164.2
MES-2	1,414.6	26,834	16,674	8,134.0	159.4
MECO-2	1,508.0	35,371	21,979	8,907.8	176.5
Spacecraft Separation	1,643.0	35,013	21,756	10,176.7	286.9
Reorient Centaur	1,658.0				
Start Blowdown	1,823.0				
End Blowdown	2,073.0				

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THE NASA INTELSAT TEAM

NASA Headquarters

Dr. Stanley I. Weiss	Associate Administrator for Space Transportation Operations
Joseph B. Mahon	Director, Expendable Launch Vehicles
F. R. Schmidt	Manager, Atlas Centaur Launch Vehicle

Lewis Research Center

Dr. John F. McCarthy Jr.	Director
Dr. John Klineberg	Associate Director
Lawrence J. Ross	Director, Space Directorate
J. E. Patterson	Chief, Launch Vehicles Division
S. V. Szabo Jr.	Deputy Chief, Launch Vehicles Division
Richard E. Orzechowski	Intelsat Mission Project Engineer

Kennedy Space Center

Richard G. Smith	Director
Thomas S. Walton	Director, Cargo Operations
Charles D. Gay	Director, Expendable Vehicle Operations
D.C. Sheppard	Chief, Automated Payloads Division
James L. Womack	Chief, Atlas-Centaur Operations Division
Larry Kruse	Spacecraft Coordinator

CONTRACTORS

General Dynamics/Convair  
San Diego, Calif.

Atlas Centaur launch vehicle

Honeywell Aerospace Division  
St. Petersburg, Fla.

Centaur guidance inertial  
measurement group

Pratt and Whitney  
Aircraft Group  
West Palm Beach, Fla.

Centaur RL-10 engines

Teledyne Industries, Inc.  
Northridge, Calif.

Digital computer unit/PCM  
telemetry

Rocketdyne Division  
Rockwell International Corp.  
Canoga Park, Calif.

MA-5 propulsion systems

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